

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

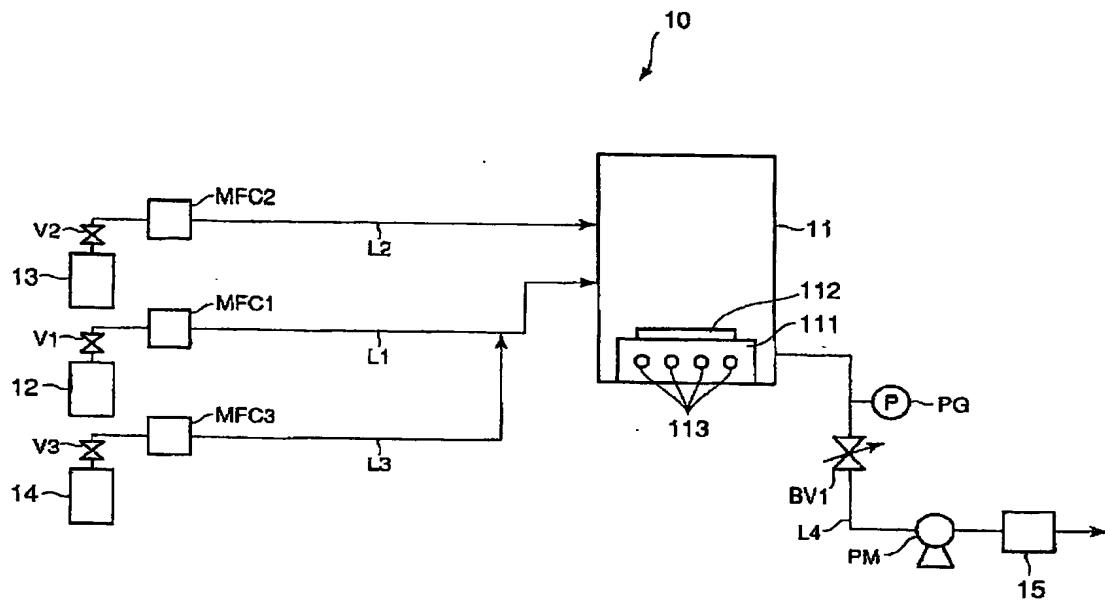
PCT

(10) International Publication Number
WO 2004/092441 A2

- (51) International Patent Classification⁷: **C23C 16/34**
- (21) International Application Number: **PCT/IB2004/001346**
- (22) International Filing Date: 8 April 2004 (08.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2003-113118 17 April 2003 (17.04.2003) JP
- (71) Applicant (for all designated States except US): L'AIR LIQUIDE, SOCIETE ANONYME A DIRECTOIRE ET CONSEIL DE SURVEILLANCE POUR L'ETUDE ET L'EXPLOITATION DES PROCEDES GEORGES CLAUDE [FR/FR]; 75, quai d'Orsay, F-75321 Paris Cedex 07 (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): DUSSARRAT, Christian [FR/JP]; Tsukubamatsushiro 4-2-1 #204, 4-15-2, Matsushiro, Tsukuba-shi (JP). GIRARD, Jean-Marc [FR/FR]; 12, rue Michel Chasles, F-75012 Paris (FR).
- (74) Agents: VESIN, Jacques et al.; L'Air Liquide S.A., 75, quai d'Orsay, F-75321 Paris Cedex 07 (FR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,

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(54) Title: METHODS FOR PRODUCING SILICON NITRIDE FILMS BY VAPOR-PHASE GROWTH



WO 2004/092441 A2

(57) Abstract: To provide a method that is not accompanied by the production of ammonium chloride, avoids significant admixture of carbonaceous contaminants in the film products, and can produce silicon nitride films with improved film properties even at relatively low temperatures. Silicon nitride films are formed on substrates by feeding a hydrazine gas and at least 1 precursor gas selected from the group consisting of trisilylamine gas and a silylhydrazine gas into a reaction chamber (11) that holds at least 1 substrate (112) and inducing the vapor-phase reaction of the two gases. Silylhydrazine gas can also produce silicon nitride films by itself by thermal decomposition.



GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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